

Claims:

1. A method for enhancing levels of docosahexaenoic acid and eicosapentaenoic acid in thraustochytrid protist, comprising the steps of:
 - (a) inoculating the thraustochytrid protist belonging to the genera *Schizochytrium* deposited at The Microbial Type Culture Collection (MTCC), Institute of Microbial Technology, Chandigarh, India under the accession number MTCC 5121 or *Thraustochytrium* deposited at The Microbial Type Culture Collection (MTCC), Institute of Microbial Technology, Chandigarh, India under the accession number MTCC 5122 or *Aplanochytrium* deposited at The Microbial Type Culture Collection (MTCC), Institute of Microbial Technology, Chandigarh, India under the accession number MTCC 5123 in a culture medium and growing the same for about 2 days at 25° C to 30° C;
 - (b) obtaining the cultures thus grown for use as inoculum and inoculating a medium having increased viscosity using the same;
 - (c) growing the thraustochytrid protist culture of step (b) for 2 to 5 days at 25° to 30°C, and
 - (d) harvesting the cells by centrifugation and extracting the enhanced amounts of docosahexaenoic acid and eicosapentaenoic acids from the cells.
2. A method as claimed in claim 1 wherein step (a), the culture medium used comprises peptone in the range of 0.5% Wt. to 1.5% Wt.; yeast extract in the range of 0.01% Wt. to 0.1% Wt.; glucose in the range of 0.01% to 1.0% Wt.; and sea water of about 100 ml.
3. A method as claimed in claim 1 wherein step (b), the culture medium used comprises peptone in the range of 0.5% Wt. to 1.5% Wt.; yeast extract in the range of 0.01% Wt. to 0.1% Wt.; glucose in the range of 0.01% to 1.0% Wt.; polyvinyl pyrrolidone in the range of 0.5% Wt. to 1.5% Wt.; and sea water of about 100 ml.
4. A method as claimed in claim 3, wherein the culture comprises 1.5% peptone; 0.1% yeast extract; 1.0% glucose; 1.0 % polyvinyl pyrrolidone and 100 ml sea water.
5. A method according to claims 2 or 3, wherein said culture medium comprises 1.5 % peptone.
6. A method according to claim 2 or 3, wherein said culture medium comprises 0.1% yeast extract.
7. A method according to claim 2 or 3, wherein said culture medium comprises 1.0% glucose.